

Remarks

Previously examined claims 1, 3-9, 13-24, and 26-34 and new claims 35-37 are pending. Claims 2 10-12 and 25 were previously cancelled. Formerly independent apparatus and method claims 20 and 23 have been made to depend from new system claim 33 as have other dependent claims 3, 6, 14, 18, 29 and 31.

All previously examined and still pending claims 1, 3-9 and 13-24, and 26-34 stand rejected. Claims 1, 3-9, 13-17 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (US 5,831,600 hereinafter "Inoue") in view of Sims (US 6,657,616 hereinafter "Sims") and in further view of Ohara et al (US 5,485,176 hereinafter "Ohara"). The remaining pending claims 18-24, 26-28, 33 and 34 are rejected over the combination of these three references in further view of Westerman et al. (US 6,323,846 hereinafter "Westerman"). These rejections are traversed for the following reasons.

The primary cited reference, Inoue, is described by the Examiner as disclosing the basic claimed structure of "a scanning circuit (e.g. Oscillation circuit)", "a control circuit (e.g. CPU)" and an AC/DC converter "wherein the system is configured to detect a human finger when the finger enters the electric field (See Abstract and Col. 3, 41-Col. 4, 5 and claim 1)." It is further alleged to disclose that "the input device comprises a matrix of (spaced apart) conductive lines arranged as....column....(and) row... separated by an electrically inclusive sheet". The examiner further states on page 3 of the Detailed Action that "Inoue does not specifically disclose that the scanning circuit works at radio frequency range. However, Sims discloses a capacitive touch circuit comprising a series of conductors and RF signal receiver, wherein the decrease in the received signal strength is detected as the result of the presence of a stylus or finger (See Col. 2, 51-Col.3, 20)." The Examiner concludes "it would have been obvious ... to modify the Inoue's invention to include the radio frequency scanning feature of Sims' invention in order to design a system that is more sensitive to touch and less prone to malfunctioning."

First, it is noted that neither Inoue nor Sims is directed to an interactive book reading system responsive to a human finger presence. The examiner's assertion that Inoue discloses a

system “configured to detect a human finger when the finger enters the electric field” is traversed on the grounds that the portions of Inoue cited in support of this conclusion (Abstract and Col. 3, 41-Col. 4, 5 and claim 1) all refer to detecting a “coordinate input object ... brought into contact with an” operation area or tablet. A finger coordinate input object would enter the electric field before contact was made. Those cited portions of Inoue don’t teach or suggest detection by the mere presence of the finger without contact. The examiner further admits in the rejection that “Sims discloses a capacitive touch circuit....” (emphasis added). Ohara does disclose an interactive book reading system but it is not responsive to a human finger presence and is only a tertiary reference cited only for an audible output device.

Secondly, the particular proposed combination of “the radio frequency scanning feature of Sims’ invention” into Inoue is unsupported. The capacitive touch keyboard of Sims is supposed to be an improvement over prior art devices “implemented by the deposition of opposing conductive key pads to opposite sides of a dielectric element.” (Sims Col.1, 21-23) There is no reason why one of ordinary skill in the art would attempt to take only radio frequency operation from Sims to incorporate into Inoue where Sims teaches an inventive input device that is an improvement over known devices like the older Inoue device.

MPEP 2143.01 subparagraph II, “WHERE THE TEACHINGS OF THE PRIOR ART CONFLICT, THE EXAMINER MUST WEIGH THE SUGGESTIVE POWER OF EACH REFERENCE”, states that “The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts. Where the teachings of two or more prior art references conflict, the examiner must weigh the power of each reference to suggest solutions to one of ordinary skill in the art, considering the degree to which one reference might accurately discredit another. *In re Young*, 927 F.2d 588, 18 USPQ2d 1089 (Fed. Cir. 1991).” Here, Sims specifically discredits an input device like Inoue’s having conductive elements forming the input keys on opposite sides of a dielectric element. Accordingly, one of ordinary skill in the art would either not combine Sims with Inoue or would combine in a different way than that proposed by the Examiner, namely by at least adopting the electrode

structure of Sims, which would take that combination out of the scope of the presently pending claims.

Thirdly, there is no support for the examiner's conclusion that simply adopting a radio frequency scan from Sims would improve in any way the performance of Inoue, particularly making it more sensitive to touch or less prone to malfunction. The only improvement that could be expected to come from Sims would be from adopting the entire Sims input device with coplanar interdigitated electrodes. Any improvement in Inoue from adopting any less of Sims than that is sheer speculation and unsupported.

As stated above, Ohara is not relied upon by the examiner to address the shortcomings of Inoue or the proposed combination of Inoue with Sims. Ohara adds nothing to the combination of Sims with Inoue and, in fact, teaches away from that combination as it teaches a location detection system different from those of both Inoue and Sims that can be used with a book and does not operate by finger touch or detection. Accordingly, the proposed combination of Inoue with Sims and Ohara is *prima facie* unsupported as are the rejections based upon that combination.

The remaining rejections of claims 18-24, 26-28, 33 and 34 over the combination of Inoue, Sims and Ohara in further view of Westerman are unsupported for similar reasons. Westerman is not relied upon by the examiner to address the shortcomings of Inoue or the proposed combination of Inoue with Sims. Westerman adds nothing to the combination of Sims with Inoue and, in fact, teaches away from Inoue and Sims in that it teaches a location detection system different from those of both Inoue and Sims (Westerman employs what appear to be individual electrodes rather than electrode pairs). Accordingly, the proposed combination of Inoue with Sims, Ohara and Westerman is also *prima facie* unsupported as are the rejections based upon that combination.

New claims 35-37 are presented for examination and depend from previously examined independent claim 33. Claim 33 includes features listed in several of the previously examined claims but collected together in one independent claim directed more specifically to "(a)n

interactive book reading system response to the presence of human fingers through pages of a book” and does not require finger contact with the sensor or its top surface. While Inoue is cited by the examiner as being able to detect a human finger when the finger enters the RF field, in each of the text portions cited by the examiner in support of this characterization (“Abstract and Col. 3, line 41-Col. 4, line 5 and claim 1), the text repeatedly expressly refers to “a coordinate input object (that) is brought into contact with an operational area” (or tablet in the Abstract). Elsewhere, Inoue refers to the capacitance of electrostatic capacitors formed between the X and Y conductive lines of the disclosed coordinate input devices. (Inoue Col. 2, lines 13-15, 18-20, 22 and 40-43)

The present invention operates by radio transmission rather than capacitive coupling. Original examined claim 33 expressly calls for the claimed scanning circuit to detect human finger presences above pages of a book on a spacer itself separating the book pages from the scanning circuit. The use of radio transmission eliminates the need for actual contact and actually permits the detection of a user’s finger(s) spaced away from the device, at least through several pages on the device and as far away as up to about four inches (paragraph [0037] of the present application as originally filed).

Original examined claim 33 further expressly called for “a series of cross-points formed by a matrix of narrow trace width conductive lines arranged as a plurality of spaced apart column conductive lines on a first major side of an electrically insulative sheet and a plurality of spaced apart row conductive lines transverse to the plurality of column conductive lines on a second major side of the electrically insulative sheet opposite the first side.” To emphasize this difference between capacitive sensors and the present invention, claim 33 is amended to expressly state that “the width of the conductive lines being minimized to reduce capacitive couple effect between the conductive lines at the cross-points” to emphasize this difference. Support is found at least in paragraphs [0038] and [0043] of the original application.

Original examined claim 33 further expressly referred to the provision of a “dielectric spacer positioned over the scanning circuit” for separation. To again emphasize the differences

between the invention and Inoue, that claim element is further amended to expressly call for a spacer "0.06 inches or more thick to reduce effect of moisture on the sensitivity of the cross-points of the matrix" Again support is provided at least by paragraph [0043]. In contrast, Inoue refers only to the provision of "a protective film 8" of unspecified thickness but suggesting a layer much thinner than that expressly claimed. Accordingly, claim 33 even more specifically claims over the cited prior art.

New claims 35-37, depending from claim 33 are presented for examination. They relate to the configuration of the claimed control circuit to identify user selections. Support is provided at least by paragraphs [0053]-[0055] and FIG. 7 of the originally filed application.

Statement of Substance of Examiner Interview held on May 4, 2010

Applicants wish to thank Examiner Hadizonooz for extending the courtesy of a telephonic interview in respect to this application on Tuesday October 19, 2009 with the Applicant and the Applicant's undersigned representative. During the interview, the Applicant presented an overview of the present invention reiterating that it is an interactive book reading system responsive to the presence of a human finger. While the sensor of the present invention works when physically touched, the configuration of the sensor, which relies on electromagnetic RF coupling while minimizing electrostatic capacitive coupling, enables it to sense fingers (and hands) spaced away from the sensor surface and through several intervening book pages. Nevertheless, it shares several features with the sensing systems of the cited references (Inoue, Sims and Ohara) and other prior art sensors which rely on (physical contact) touch or active pens and include multiple line electrodes that are repeatedly scanned.

Examiner Hadizonooz indicated she wanted to receive a response to the pending Office Action and would review the cited art and reconsider the rejections based on a new understanding that the invention of the present application does not require actual contact to work.

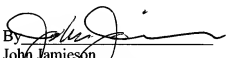
The undersigned representative further requested that, in view of the six, non-final office actions issued thus far in this application citing essentially the same prior art references in different combinations, if she was still unwilling to allow any of the claims, the examiner contact the undersigned representative by phone to discuss what particular specificity would be needed in the claims to overcome this prior art. The Examiner agreed to do so.

Conclusion

In view of the foregoing, Applicant requests reconsideration and withdrawal of all of the rejections of the previously examined claims 1, 3-11 and 13-34, examination of new claims 35-37 and allowance of the application and all pending claims 1, 3-11 and 13-37.

Respectfully submitted,

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